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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/726,624	11/30/2000	Min Li	01107.00063	1501

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EXAMINER

PONNALURI, PADMASHRI

ART UNIT

PAPER NUMBER

1639

DATE MAILED: 02/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.  
**09/726,624**

Applicant(s)  
**Min Li**

Examiner  
**Padmashri Ponnaluri**

Art Unit  
**1639**



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Dec 9, 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1, 5, 9, 17, 22, 45-51, 53-63, and 65-69 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 5, 9, 17, 22, 45-51, 53-63, and 65-69 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

Art Unit: 1639

### DETAILED ACTION

1. This application is a divisional of application 08/861,572 which claims priority to a provisional application 60/018,074.
2. The preliminary amendment A, filed on 11/30/00; amendment B, filed on 4/4/02; amendment C, filed on 7/31/02 have been fully considered and entered into the application.
3. Claims 2-4, 6-8, 10-16, 18-21, 23-37 have been canceled by the amendment A, claims 38-44 have been canceled by the amendment B, and claims 52 and 64 have been canceled by the amendment C. New claims 45-69 have been added by the amendment B.
4. Claims 1, 5, 7, 9, 17, 22, 45-51, 53-63, 65-69 are currently pending and are being examined in this application.
5. Applicant's election without traverse of species green fluorescent protein as a tag associated with the virus; NMDA receptor protein Mag 4.1 (SEQ ID NO : 2) as the ligand and in vivo assay, in Paper No. 9 is acknowledged
6. This application has been filed with informal drawings. If applicant renumber the figures, applicant is encouraged to amend the specification so that the description of renumbered figure corresponds to the renumbered figures.
7. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Art Unit: 1639

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1, 5, 9, 45-51, 53, 55-56 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 5,270,170 (Schatz et al).

The instant claims briefly recite a method of detecting the presence of a polypeptide in a sample comprising contacting the sample with a detectable virus expressing on its surface a ligand for the polypeptide and detecting binding of the virus to the sample.

US Patent 5,270,170 teaches peptide libraries and screening method. The reference teaches that the screening method of the invention comprises lysing the cells transformed with the peptide library, contacting the fusion proteins of the peptide library with a receptor and isolating the vector that encodes the peptide that binds to the receptor. The reference also teaches the use of fluorescence-activated cell sorter to identify the peptide. The reference teaches once a peptide ligand of interest has been identified, a variety of techniques can be used to diversify a peptide library to construct ligands with improved properties (see column 15). The reference teaches that the degenerate oligonucleotides encoding the ligand are cloned into the random peptide library expression vector to produce variations of starting peptide sequences, and the method is useful for expanding diversity (see column 15) (refers to the instant claim 5). The reference teaches that the receptor (polypeptide of the instant claims) refers to a molecule that

Art Unit: 1639

has affinity for a given ligand, and the receptor can be a naturally occurring and can be in an unaltered state or as aggregates with other species (see column 4) (refers to the sample of the instant claims). The reference further teaches that sera, fluids, tissues or cell from patient with disease can be used in the present screening method to identify peptides (see column 5). The reference clearly anticipates the claimed invention.

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CAR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims 1, 5, 9, 17, 22, 45-51, 53, 5556, 58-63, 65, 67-68 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5,270,170 (Schatz et al ) and Barbas, III et al (US Patent 6,242,568, filing date 01/1998) in view of the specification disclosure.

Schatz et al has been discussed supra.

Art Unit: 1639

The claimed invention differs from the prior art teachings by reciting bacteriophage expressing more than 10 copies of the ligand on its surface. Schatz et al do not teach that more than 10 copies of ligand are displayed on the surface of the phage. However, Barbas, III et al teach that mature phage contain 2500 to 3000 copies of VIII coat protein. And the instant specification discloses that the ligand can be encoded by pIII or pVIII coat protein which is standard in the art. Thus, it would have been obvious to one skilled in the art at the time the invention was made to use to make fusion proteins of ligand linked to pVIII coat protein of a bacteriophage, such that multiple copies upto 3000 copies of the ligand are displayed on the surface of the phage.

12. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 U. S. P. Q. 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 U. S. P. Q. 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 U. S. P. Q. 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 U. S. P. Q. 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CAR 1.321© may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground

Art Unit: 1639

provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CAR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CAR 3.73(b).

13. Claims 1, 5, 9, 17, 22, 45-51, 53-63, and 65-69 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-25 of U.S. Patent No. 6,190,856. Although the conflicting claims are not identical, they are not patentably distinct from each other because the reference claims methods encompass the instant claimed method of detecting the presence of a polypeptide in a sample.

14. No claims are allowed.

15. The following is a statement of reasons for the indication of allowable subject matter: a method of detecting a polypeptide in sample by contacting the sample with a virus displaying a peptide of amino acid sequence of SEQ ID NO 2 or SEQ ID NO 3 is neither taught nor suggested by the prior art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to P. Ponnaluri whose telephone number is (703) 305-3884. The examiner is

Art Unit: 1639

on *Increased Flex Schedule* and can normally be reached on Monday to Friday from 7.00 AM to 3.30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Wang, can be reached on (703) 306-3217. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-4242.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.

P. Ponnaluri  
Primary Examiner  
Technology Center 1600  
Art Unit 1639  
19 February 2003

  
PADMASHRI PONNALURI  
PRIMARY EXAMINER